

CLAIMS

What is claimed is:

- 1 1. A pellicle device comprising:
2 a base to align with a photomask;
3 a pellicle to slide relative to the base between a first position overlying the
4 photomask and a second position not overlying the photomask; and
5 a transport element to move the pellicle.
- 1 2. The pellicle device of claim 1, wherein the pellicle comprises at least one shutter
2 to open and close.
- 1 3. The pellicle device of claim 1, wherein the pellicle comprises a securing
2 mechanism to maintain the pellicle overlying the base when the pellicle is in the first
3 position.
- 1 4. The pellicle device of claim 3, wherein the securing mechanism uses at least one
2 magnetic field.
- 1 5. The pellicle device of claim 4, wherein the securing mechanism comprises an
2 electromagnet to produce the at least one magnetic field.
- 1 6. The pellicle device of claim 4, wherein the securing mechanism further comprises
2 an outrigger element within the at least one magnetic field.

1 7. A pellicle device comprising:
2 a base to align with a photomask;
3 a retractable pellicle to move pivotlessly relative to the base between a first
4 position overlying the photomask and a second position away from the photomask; and
5 a transport element to move the pellicle.

1 8. The pellicle device of claim 7, wherein the transport element comprises at least
2 one arm member coupled to the pellicle.

1 9. The pellicle device of claim 7, wherein the pellicle does not contact the base in
2 the second position.

1 10. The pellicle device of claim 7, wherein the pellicle moves along an axis with
2 respect to the base.

1 11. The pellicle device of claim 7, wherein the pellicle comprises at least one shutter
2 to open and close.

1 12. The pellicle device of claim 7, wherein the pellicle comprises a securing
2 mechanism to maintain the pellicle overlying the base when the pellicle is in the first
3 position.

1 13. The pellicle device of claim 7, wherein the pellicle is opaque to photolithographic
2 radiation.

1 14. The pellicle device of claim 7, wherein a portion of the pellicle is transparent to
2 inspection radiation.

1 15. A pellicle device comprising:
2 a base to align with a photomask;
3 a pellicle to move about a vertical axis relative to the base between a first position
4 overlying the photomask and a second position not overlying the photomask; and
5 a transport element to move the pellicle.

1 16. The pellicle device of claim 15, wherein the pellicle comprises a securing
2 mechanism to maintain the pellicle overlying the base when the pellicle is in the first
3 position.

1 17. The pellicle device of claim 16, wherein the securing mechanism uses at least one
2 magnetic field.

1 18. A pellicle device comprising:
2 a base to align with a photomask;
3 a pellicle diaphragm, coupled to the base, having a closed position to cover the
4 photomask and having an open position to uncover the photomask.

1 19. The pellicle device of claim 18, wherein the pellicle device further comprises a
2 transport element coupled to the pellicle diaphragm to open and close the pellicle
3 diaphragm.

1 20. The pellicle device of claim 18, wherein the base and the pellicle diaphragm form
2 a protective enclosure around the photomask.

1 21. A pellicle device comprising:
2 a base to align with a photomask;
3 a pellicle comprising two or more shutters to move relative to the base between a
4 first position overlying the photomask and a second position not overlying the
5 photomask; and
6 a transport element to move the pellicle.

1 22. The pellicle device recited in claim 21, wherein the wavelength of the
2 photolithographic radiation is within the range of 2 to 200 nanometers.

1 23. The pellicle recited in claim 21, wherein the photolithographic radiation is from
2 the group consisting of ultraviolet, deep ultraviolet, extreme ultraviolet, X-ray, electron
3 beam, and ion beam.

1 24. A method comprising:
2 covering a photomask with a retractable pellicle; and
3 pivotlessly retracting the pellicle away from the photomask to uncover the
4 photomask.

1 25. The method recited in claim 24, wherein the pellicle is retracted along one axis.

1 26. The method recited in claim 24, wherein the pellicle is retracted to irradiate the
2 photomask with photolithographic radiation.

1 27. The method recited in claim 26 and further comprising:
2 replacing the pellicle when not irradiating the photomask with photolithographic
3 radiation.

- 1 28. The method recited in claim 27, wherein the pellicle is coupled to a transport
2 element, the method further comprising:
3 retracting and replacing the pellicle using the transport element.
- 1 29. The method recited in claim 24, wherein the wavelength of the photolithographic
2 radiation is within the range of 2 to 200 nanometers.
- 1 30. The method recited in claim 24, wherein the photolithographic radiation is from
2 the group consisting of ultraviolet, deep ultraviolet, extreme ultraviolet, X-ray, electron
3 beam, and ion beam.
- 1 31. A method comprising:
2 covering a photomask with a pellicle that is pivotable about a vertical axis; and
3 pivoting the pellicle away from the photomask to uncover the photomask.
- 1 32. The method recited in claim 31, wherein the photomask is uncovered to irradiate
2 the photomask with photolithographic radiation.
- 1 33. The method recited in claim 31 and further comprising:
2 replacing the pellicle when not irradiating the photomask with photolithographic
3 radiation.
- 1 34. The method recited in claim 31, wherein the pellicle is coupled to a transport
2 element, the method further comprising:
3 pivoting and replacing the pellicle using the transport element.
- 1 35. A method comprising:
2 covering a photomask with a pellicle comprising two or more shutters; and
3 opening the shutters to uncover the photomask.

1 36. The method recited in claim 35, wherein the photomask is uncovered to irradiate
2 the photomask with photolithographic radiation.

1 37. The method recited in claim 35 and further comprising:
2 closing the shutters when not irradiating the photomask with photolithographic
3 radiation.

1 38. The method recited in claim 35, wherein the shutters are coupled to a transport
2 element, the method further comprising:
3 opening and closing the shutters using the transport element.

1 39. A method comprising:
2 covering a photomask with a pellicle comprising a diaphragm; and
3 opening the diaphragm to uncover the photomask.

1 40. The method recited in claim 39, wherein the photomask is uncovered to irradiate
2 the photomask with photolithographic radiation.

1 41. The method recited in claim 39 and further comprising:
2 closing the diaphragm when not irradiating the photomask with photolithographic
3 radiation.

1 42. The method recited in claim 39, wherein the diaphragm is coupled to a transport
2 element, the method further comprising:
3 opening and closing the diaphragm with the transport element.